

Architectural Drafting

Levels: Grades 11-12
Units of Credit: Full Year
CIP Code: 15.1303
Prerequisite: Design and Drafting Technology

COURSE DESCRIPTION

The study of architecture encompasses a sensitivity to design, skill in drawing techniques, and a knowledge of the latest construction materials. It is the combination of these abilities that yields the outstanding architects of today's world. These architects design massive high-rise buildings, quaint lake-shore cottages, modern churches, and family homes as required to meet the needs of our society. The world of architecture has been one of the major conquests of humanity in designing structures to bring the thrill of lasting beauty to the eye of the beholder. Parts of the current building code should be in the various units.

This architecture curriculum has been designed to allow fine arts credit with the approval of your school district.

Instructors should be cautioned to limit the size of the dwelling to 1,600 square feet on the main floor.

STANDARD 151303-01 The student will be able to understand architectural design fundamentals.

OBJECTIVES

151303-0101 Identify the historical influences that helped shape today's home designs.
151303-0102 Recognize and describe the elements of contemporary dwellings.
151303-0103 Discuss current trends in architecture.
151303-0104 List family needs that should be considered when planning a dwelling.
related fine arts credit: (1, 2, 6, 10, 13, 14, 15)

STANDARD 151303-02 The student will be able to understand and apply architectural room planning for the sleeping, living, and service areas.

OBJECTIVES

151303-0201 Discuss factors that are important in the design of bedrooms, bathrooms, and closets. Apply those design elements to sketches and drawings.
151303-0202 Discuss factors that are important in the design of living rooms, entryways, foyers, porches, and courts. Apply those design elements to sketches and drawings.
151303-0203 Discuss factors that are important in the design of kitchens, clothes care centers, and garages. Apply those design elements to sketches and drawings.
151303-0204 Discuss home construction costs using the cost per square foot. Discuss cost per type of construction, affordability, and the cost of amenities.
151303-0205 Discuss accessibility requirements and the cost impact.
related fine arts credit: (1, 2, 6, 10, 13, 14, 15)

**STANDARD
151303-03** **The student will be able to understand how to design a residential floor plan.**

OBJECTIVES

- 151303-0301 List the information required on a typical floor plan.
151303-0302 Represent typical materials using standard architectural symbols.
151303-0303 Design and draw (to scale) a residential floor plan using the accepted symbols and techniques.
151303-0304 Draw the dimensions of a floor plan in a clear and precise manner which complies with architectural standards.
151303-0305 Recognize the difference between a good and poor drawing of a floor plan.
151303-0306 Discuss accessibility requirements for good functional utility.
related fine arts credit: (1, 2, 4, 6, 10, 13, 14, 15, 18)

**STANDARD
151303-04** **The student will be able to understand how to analyze, calculate, and design footings and foundations.**

OBJECTIVES

- 151303-0401 List the major considerations when designing a footing for a residential foundation.
151303-0402 Describe the procedure for staking out a house location.
151303-0403 Analyze a typical floor plan to determine the appropriate foundation.
151303-0404 Discuss the design considerations for wood, concrete, and masonry foundation walls.
151303-0405 Calculate the load to be supported by a beam.
151303-0406 Discuss different design requirements for basements, crawl spaces, or slabs on grade construction.
related fine arts credit: (1, 2, 4, 6, 10, 13, 14, 15)

**STANDARD
151303-05** **The student will be able to understand how to layout exterior and interior elevations and millwork details.**

OBJECTIVES

- 151303-0501 List features that should be included on an exterior elevation.
151303-0502 Identify the dimensions commonly shown on elevations.
151303-0503 Illustrate symbols that are often found on elevations.
151303-0504 Draw a typical exterior elevation which demonstrates proper techniques.
151303-0505 Draw millwork elevations and special details for kitchen cabinets, bathroom cabinets, and linen, wardrobe, and utility closets and cabinets.
151303-0506 Draw details for special built-ins.
151303-0507 Use proper architectural call-outs.
related fine arts credit: (1, 2, 4, 6, 7, 10, 12, 13, 14, 15, 17, 20)

**STANDARD
151303-06** **The student will be able to understand how to layout wall construction.**

OBJECTIVES

- 151303-0601 Name the components of a typical frame wall.
151303-0602 Explain the methods of frame wall construction.
151303-0603 Interpret the information shown on a ceiling joist span data chart and trusses.

151303-0604 Draw a typical wall section and full cross sections.
related fine arts credit: (1, 2, 6, 10, 13, 14, 15)

STANDARD **The student will be able to understand how to layout plot plans.**
151303-07

OBJECTIVES

151303-0701 Draw a plot plan or site plan for a residence.
151303-0702 Show grade elevations against the home, the contours of the lot, and corners of the lot for drainage away from the home.
151303-0703 Show water, power, gas, and sewer lines and/or septic tank, and the drainage field where appropriate.
151303-0704 Show walks, driveways, patios, and other onsite improvements.
151303-0705 Show the relationship of the finished floor elevation of the home and the finished grade around the home.
related fine arts credit: (4, 7)

STANDARD **The student will be able to understand how to layout stair details.**
151303-08

OBJECTIVES

151303-0801 Draw interior and exterior stair details appropriate to those found in your home.
151303-0802 Stair details should comply with applicable building codes.
151303-0803 Show hand rails, guards rails, and other safety features.
151303-0804 Use and label correct materials in stair details.
related fine arts credit: (8, 22)

STANDARD **The student will be able to understand how to layout fireplace details.**
151303-09

OBJECTIVES

151303-0901 Draw fireplace details, including vertical and horizontal cross sections through the fire box and full vertical cross sections through the chimney.
151303-0902 Fireplace details should meet seismic requirements for its locale.
151303-0903 Draw the full front elevation of the fireplace.
151303-0904 Discuss other alternative fireplace or stove type heating.
related fine arts credit: (8)

STANDARD **The student will be able to understand how to layout electrical plans.**
151303-10

OBJECTIVES

151303-1001 Draw electric plans for all floors of your architectural design to comply with National Electrical Code (NEC).
151303-1002 Use correct architectural and national electrical code symbols.
151303-1003 Show the correct location of smoke detectors in the dwelling as per code.

STANDARD 151303-11 The student will be able to understand how to complete a door, window, and finishing schedules.

OBJECTIVES

- 151303-1101 Draw a window schedule that would include window size, make, material, and type of glazing.
- 151303-1102 Draw a door schedule that would include door size, style, type of lockset, special features, and jamb size.
- 151303-1103 Draw a finish schedule that would include different types of wall and ceiling finishes, types of floor coverings, special wainscot wall finishes, etc.

STANDARD 151303-12 The student will be able to write specifications and description of materials for a set of residential plans.

OBJECTIVES

- 151303-1201 Prepare a specification index utilizing standard CSI 16-division format.
- 151303-1202 Prepare an outline specification utilizing the 3-part section format.
- 151303-1203 Write a complete specification sector using the imperative language format.

PROFESSIONAL DEVELOPMENT

STANDARD 151303-13 The student will understand the need for professional development.

OBJECTIVES

- 151303-1301 Complete a personal inventory
- 151303-1302 Set and meet goals
- 151303-1303 Motivate yourself
- 151303-1304 Decision making
- 151303-1305 Manage time
- 151303-1306 Organize personal belongings and lab equipment
- 151303-1307 Communicate verbally
- 151303-1308 Write effective communications
- 151303-1309 Establish a personal reading program
- 151303-1310 Develop effective work skills and attitudes
- 151303-1311* Master a working knowledge of SkillsUSA-SKILLSUSA-VICA
- learn the acronym SkillsUSA-SKILLSUSA-VICA
 - state the SkillsUSA-SKILLSUSA-VICA motto
 - state the SkillsUSA-VICA creed
 - learn the SkillsUSA-VICA colors
 - describe the official SkillsUSA-VICA dress
 - describe the procedure for becoming a SkillsUSA-VICA officer

STANDARD **The student will understand the need for leadership skills.**
151303-14

OBJECTIVES

- 151303-1401 Serve on a committee
- 151303-1402 Prepare an agenda
- 151303-1403 Assist in planning a meeting
- 151303-1404 Review basic parliamentary procedure
 - Make a main motion
- 151303-1405 Participate in a school project
- 151303-1406 Attend a community meeting
- 151303-1407 Practice effective speaking
- 151303-1408 Present a 3-5 minute talk
- 151303-1409 Implement a leadership project
- 151303-1410* Master a working knowledge of SkillsUSA-VICA
 - Describe the meaning of the SkillsUSA-VICA emblem
 - State the SkillsUSA-VICA pledge
 - Describe the duties of a SkillsUSA-VICA officer

STANDARD **The student will understand the need for career planning.**
151303-15

OBJECTIVES

- 151303-1501 Define your future occupation
- 151303-1502 Survey employment opportunities
- 151303-1503 Report on a trade journal article
- 151303-1504 Explore opportunities for advanced training
- 151303-1505 Conduct a worker interview
- 151303-1506 Contact a professional association
- 151303-1507 Explore entrepreneurship opportunities
- 151303-1508 Give a talk about your career
- 151303-1509 Review career goals

STANDARD **The student will understand the need for employment skills.**
151303-16

OBJECTIVES

- 151303-1601 Develop a list of work standards to follow at school and on the job
- 151303-1602 Evaluate your personal ethics
 - Evaluate your personal ethics against acceptable workplace ethics
- 151303-1603 Build a job search network
- 151303-1604 Find job leads
- 151303-1605 Write a resume
- 151303-1606 Create a job portfolio
- 151303-1607 Complete a job application
- 151303-1608 Write a business letter and memo
- 151303-1609 Participate in an actual or simulated job interview

SkillsUSA-VICA PDP requirements - optional but recommended